

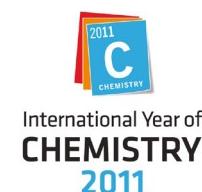


IONA JOHNSON

# CERIUM

Element Symbol: **Ce**  
Atomic Number: **58**

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Royal Australian Chemical Institute

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# CERIUM

Element symbol: **Ce**

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Cerium was discovered by Jöns Jakob Berzelius and Wilhelm Hisinger in Sweden, and by Martin Heinrich Klaproth in Germany, in 1803.

Cerium is named after Ceres, the dwarf planet found in the asteroid belt in our Solar System. The planet is named after the Roman goddess Ceres, goddess of agricultural fertility and motherly relationships.

The compound discovered in 1803 was an oxide of cerium, commonly referred to as 'ceria'. The development of electrochemistry allowed Carl Gustaf Mosander to isolate cerium as a metal. Cerium was first prepared as a metal in 1875 by Hillebrand and Norton.

Cerium occurs naturally in a number of minerals in the Earth's crust and is the most abundant rare earth element. It has a similar appearance to lead, and is highly reactive, with high melting and boiling points. It decomposes in water and can ignite when heated or scratched.

Since it will ignite when scratched, cerium is a key component of disposable and pocket lighters. Cerium compounds are used in the glass manufacturing process, as both a component and as a polishing agent. Cerium(III) oxide is used in catalytic converters to reduce carbon monoxide emissions from car exhausts.

Cerium oxide was used extensively in incandescent gas mantles, as rare earth oxides emit a lot of energy in the visible spectrum. The oxide is also used in self-cleaning ovens to stop cooking residues from building up on the oven walls.

As with many other things that can be dug out of the ground, exploration is currently planned in Australia to determine if there are viable cerium sources for future mining. It is confirmed that Australia has large supplies of monazite, one of the cerium containing minerals.

*Provided by the element sponsor Sarah Lau*

## ARTISTS DESCRIPTION

Cerium is named after Ceres, a dwarf planet in the asteroid belt of our Solar System. It is extracted from monazite, a rock found mined in Australia. The background image here is of a rock, referring both to the dwarf planet and to its mineral origins.

Cerium compounds can have an orange/red colour. Cerium is often used in the manufacture of flints and commonly used in lighters. Striking a flint produces sparks as depicted. The lettering is silver because cerium is a metal.

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